

## WEST INDIAN DISTURBANCE OF NOVEMBER 6-10, 1938

By WILLIS E. HURD

[Marine Division, Weather Bureau, December 1938]

The only tropical disturbance of November 1938 in North Atlantic waters was that of the 6th to 10th. It pursued an unusual, though not unprecedented course, inasmuch as it described a track that, from a beginning south of the twentieth parallel, reached to latitude 24° N., then turned to the southwestward and dissipated in the approximate latitude of its inception.<sup>1</sup>

On November 4 the weather became slightly disturbed in the Leeward Islands, with wind shifts from northeast to south, but with no appreciable fall in the barometer. There was a west-northwestward movement of the small disturbed wave during the next 48 hours, but indications of organized wind circulation about a center were incomplete until the 6th when at the 7 p. m. (E. S. T.) observation, a center could be located, with some depression of the barometer, over west-central Haiti, with accompanying squalls at a considerable distance to the northward, along the southern edge of a strong anticyclone.

Even before this time the steepness of the pressure gradients along the southern slope of the high was sufficient to cause winds of fresh gale force (8) from east to northeast directions, southeast of the Bahama Islands, during the night of the 5th-6th. These winds were reported by the S. S. *Coamo*, near 23° N., 68° W., and by the S. S. *Susan V. Luckenbach*, near 25° N., 74° W.

After the organization of the storm center on the 6th, the disturbance, increasing in extent, and with slowly falling central pressure, moved northwestward. November 7 was the stormiest day in connection with it. The center at 7 a. m. (E. S. T.) was near 21° N., 74° W., and at 7 p. m. near 22½° N., 75° W. During the day several ships east and southeast of the southern Bahamas, and to the north, northeast, and east of the storm center, reported gales of strength varying between force 8 and force 11. Among these, the Dutch S. S. *Bacchus*, near 24° N., 69° W., had a force-10 east gale, with squalls of force 11, lowest barometer 29.68, at about 4 a. m.; the American S. S. *Arizonan*, near 24° N., 74° W., experienced a force 10 gale from north-northeast, lowest barometer 29.65;

while a short distance to the westward at 1 p. m. the Panamanian S. S. *Maravi* reported the severest gale of the storm, a north wind of force 11, barometer 29.63. Lessening gales occurred in the vicinity during the afternoon and night, and until some time in the forenoon of the 8th, when the winds subsided materially.

At the morning observation of the 8th the center was farthest north, near the south end of Andros Island. Thereafter it took a southwesterly trend across west-central Cuba, and disappeared in the northwestern Caribbean Sea on the 10th.

The following quotations are taken from the report of Forecaster Dunn, Jacksonville, Fla.:

During the passage of this storm \* \* \* on the 7th \* \* \* San Salvador Island reported a 50 mile current velocity at their 1:30 p. m. observation. Miami, Fla., reported a maximum wind of 28 m. p. h. on the 8th and somewhat higher winds were reported from exposed places on the southeast Florida coast and Keys. The lowest reported reputable pressure was 29.54 inches at Great Ragged Island in the Bahamas.

Due to repeated warnings small craft kept in port and damage was reported to be negligible. However, wind and wave erosion was considerable on the east Florida coast and damage was estimated between \$75,000 and \$100,000 in the St. Augustine area alone. Damage by this storm and by another northeaster a few days later will necessitate some repair and extension on the land end of the north jetties at the mouth of the St. Johns river.

While the strong winds reported during this disturbance were largely gradient winds and mostly north of center, much less frequent but occasionally heavy squalls were reported south of the center. The Cuban Telephone Co. reports damage to lines in the vicinity of Baracoa on the 7th, also a 35 to 50 mile wind at Antilla and a heavy rainstorm at Caimaneira during the afternoon of the same day.

Due to high winds off the ground it was difficult to obtain upper air information in connection with this storm. Velocities of 35 to 45 m. p. h. prevailed off the surface over the Florida peninsula for 36 hours or longer while the storm was moving over the Bahamas. Miami reported a 52 mile east wind at 3,000 feet at 11 a. m., November 7.

Advisories and storm warnings were issued from the Jacksonville office of the Weather Bureau, beginning with the evening of November 6, and ending on the night of the 8th. Storm warnings were ordered for portions of the Florida coast early on the 8th.

<sup>1</sup> Chart IX in this issue of the REVIEW shows the weather conditions on the morning of the 8th, and also the track of the disturbance.

## NOTES AND REVIEWS

F. STEINHAUSER. *Die Meteorologie des Sonnblicks*, I. Teil. Vienna; Julius Springer, 1938

This 180-page volume is the first part of a comprehensive treatment, which is to appear in three parts, discussing the first 50 years of records at the observatory on the peak of the Sonnblick (3,106 meters). This observatory, located in the Austrian Alps about 50 miles south of Salzburg (47°03' N., 12°57' E.), was established on September 2, 1886, both as a meteorological station of the first order and as a center for certain types of meteorological research. This latter phase of its work has received notice through the publication from time to time in various journals of the results of research performed there. The purpose of the present contribution is to make the best possible use of the 50 years of observations for which the

Sonnblick is unique among mountain observatories. The result is a volume composed about half of text and half of tables and figures, with emphasis on the statistical treatment of the record as a whole. A topical outline of the material covered may be obtained from the chapter headings, which are as follows: Temperature, Water Vapor Content of the Air, Cloudiness and Sunshine, Precipitation Relationships, Wind Relationships, Pressure Relationships. An appendix contains extensive tabular matter.

The author states that the second part, which will appear later, will cover the meteorology of the mountain mass, relating it to the weather of its surroundings, while a third part will deal with certain special observations and analyses, including studies of periodicities in the weather and problems of dynamic climatology.—*Horace R. Byers.*